

STATE OF TENNESSEE DEPARTMENT OF HEALTH **ENVIRONMENTAL LABORATORIES**

TDH: Lab Services JRL Lab Services - Jackson Regional Lab Jackson, TN 38301 731-426-0686

TDH: Lab Services KRL Lab Services - Knoxville Regional Lab - Lab Services - Nashville Central Lab Knoxville, TN 37920 865-549-5201

TDH: Lab Services NCL Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763 Lab ID: N00004054 Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

N00004054001

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: RAW

Project Site No.: Station No.:

Date/Time Collected:

Sampler's Name:

01/26/2009 09:20 **GEOFF KLEIN**

County:

ROANE - 73

Sample Matrix:

Water

EFO: Sampling Agency: Knoxville **TDEC-DWS**

Billing Code: **Send Report To:** 327.39-12 TDEC-DWS

Agency Invoiced: **Priority Date:**

TDEC-DWS

Date/Time Received:

01/26/2009 12:40

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: **Dissolved Oxygen:**

Other:

Flow:

CFS

EST: Alkalinity, Total METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	55	mg/L	3.8	10	S Burchfield	1/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	48	mg/L	0.7	1	P Leathers	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004054002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/26/2009 09:25

Sampler's Name:

GEOFF KLEIN

County:

ROANE - 73

Sample Matrix: EFO:

Water

Sampling Agency:

Knoxville

Billing Code:

TDEC-DWS 327.39-12

Send Report To:

TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/26/2009 12:40

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	54	mg/L	3.8	10	S Burchfield	1/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	46	mg/L	0.7	1	P Leathers	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004054003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

01/26/2009 10:00

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing Code: TDEC-DWS 327.39-12

Send Report To:
Agency Invoiced:

TDEC-DWS
TDEC-DWS

Priority Date:

Date/Time Received:

01/26/2009 12:40

Received By:

L Barrociere

Field Determinations pH:

Chlorine, residual:

Conductivity: Temperature:

Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Alkalinity, Total	METHOD: EPA 310.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Total Alkalinity	76	mg/L	3.8	10	S Burchfield	1/27/2009

TEST: Hardness, Calcium	METHOD: SM 3500-Ca D					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	54	mg/L	0.7	1	P Leathers	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004054004

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/26/2009 10:05

Sampler's Name:

GEOFF KLEIN

County:

ROANE - 73

Sample Matrix:

Water

EFO:

Knoxville

Sampling Agency: Billing-Code:

TDEC-DWS

Send Report To:

327.39-12 TDEC-DWS

Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/26/2009

12:40

Received By:

L Barrociere

TEST: Alkalinity, Total	METHOD: EPA 310.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Total Alkalinity	65	mg/L	3.8	10	S Burchfield	1/27/2009	

Field Determinations

Chlorine, residual:

Dissolved Oxygen:

CFS

Conductivity:

Temperature:

pH:

Other:

Flow:

TEST: Hardness, Calcium METHOD: SM 3500-Ca D						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Calcium hardness	53	mg/L	0.7	1	P Leathers	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit



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TDH: Lab Services NCL Lab Services - Nashville Central Lab Nashville, TN 37243 615-262-6300

Sent To:

Geoff Klein

TDEC-DWS 200 East Race St Knoxville, TN 37763 **Lab ID:** N00004054 Nashville Central Laboratory

Sampling Agency: TDEC: Division of Water Supply

Billing Code:

327.39-12

This is to certify that the following results were determined using good laboratory pratices and in accordance with federal or state approved methodologies.

Analytical Supervisor

N00004054001

Project Name:

Sample Description:

on: KINGSTON WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

01/26/2009 09:20

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix:

ROANE - 73

EFO: Sampling Agency:

Water Knoxville

Billing Code:

TDEC-DWS 327.39-12 TDEC-DWS

Send Report To: Agency Invoiced:

TDEC-DWS

Priority Date:

Date/Time Received:

01/26/2009 12:40

Received By:

L Barrociere

pH: Chlorine, residual:

Field Determinations

Chlorine, residual:
Conductivity:
Temperature:
Dissolved Oxygen:

Other:

Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	01/27/2009				A Wilson	1/27/2009	

TEST: ICP-MS	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/27/2009
Barium	22	μg/L	2.5	5	M Pattanayek	1/27/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/27/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/27/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	1/27/2009
Cobalt	0.19J	μg/L	0.04	1	M Pattanayek	1/27/2009
Lead	0.27J	μg/L	0.10	1	M Pattanayek	1/27/2009
Manganese	27	μg/L	0.42	1	M Pattanayek	1/27/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	1/27/2009
Thallium	0.21J	μg/L	0.03	1	M Pattanayek	1/27/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/27/2009

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004054002

Project Name:

Sample Description:

KINGSTON WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

01/26/2009 09:25 Date/Time Collected: Sampler's Name: **GEOFF KLEIN** County:

Sample Matrix:

ROANE - 73 Water

EFO: Sampling Agency: Knoxville TDEC-DWS 327.39-12

Billing Code: Send Report To: Agency Invoiced:

TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received: 01/26/2009 12:40

Received By:

L Barrociere

Chlorine, residual: Conductivity:

Field Determinations

Temperature: **Dissolved Oxygen:**

Other: Flow:

pH:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2						
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Digestion Metals	01/27/2009				A Wilson	1/27/2009	

TEST: ICP-MS	ME.	METHOD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/27/2009
Barium	20	μg/L	2.5	5	M Pattanayek	1/27/2009
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/27/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/27/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	1/27/2009
Cobalt	0.09J	μg/L	0.04	1	M Pattanayek	1/27/2009
Lead	U	μg/L	0.10	1	M Pattanayek	1/27/2009
Manganese	2.8	μg/L	0.42	1	M Pattanayek	1/27/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	1/27/2009
Thallium	0.13J	μg/L	0.03	1	M Pattanayek	1/27/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/27/2009

TEST: Mercury	ME	METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004054003

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: RAW

Project Site No.:

Station No.:

Date/Time Collected:

01/26/2009 10:00

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix:

ROANE - 73

EFO:

Water Knoxville

Sampling Agency: Billing-Code:

TDEC-DWS 327.39-12

Send Report To: Agency Invoiced: TDEC-DWS
TDEC-DWS

Priority Date:

Date/Time Received:

01/26/2009 12:40

Received By:

L Barrociere

Field Determinations pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals	METHOD: EPA 200.2					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/27/2009				A Wilson	1/27/2009

TEST: ICP-MS	ME	THOD: EPA 200	0.8			
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/27/2009
Barium	27	μg/L	2.5	5	M Pattanayek	1/27/2009
Beryllium	U	μg/ L	0.11	1	M Pattanayek	1/27/2009
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/27/2009
Chromium	U	μg/L	2.0	5	M Pattanayek	1/27/2009
Cobalt	0.10J	μg/L	0.04	1	M Pattanayek	1/27/2009
Lead	0.14J	μg/L	0.10	1	M Pattanayek	1/27/2009
Manganese	15	μg/L	0.42	1	M Pattanayek	1/27/2009
Selenium	U	μg/L	1.3	5	M Pattanayek	1/27/2009
Thallium	0.11J	μg/L	0.03	1	M Pattanayek	1/27/2009
Vanadium	U	μg/L	3.4	5	M Pattanayek	1/27/2009

TEST: Mercury	METHOD: EPA 245.1					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit

N00004054004

Project Name:

Sample Description:

ROCKWOOD WTP

Sampler Project Name: FINISH

Project Site No.:

Station No.:

Date/Time Collected:

01/26/2009 10:05

Sampler's Name:

GEOFF KLEIN

County: Sample Matrix:

ROANE - 73

EFO:

Water

Sampling Agency:

Knoxville TDEC-DWS

Billing Code:
Send Report To:
Agency Invoiced:

327.39-12 TDEC-DWS TDEC-DWS

Priority Date:

Date/Time Received:

01/26/2009 12:40

Received By:

L Barrociere

Field Determinations

pH:

Chlorine, residual: Conductivity: Temperature: Dissolved Oxygen:

Other: Flow:

CFS

TEST: Digestion Metals	MET					
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Digestion Metals	01/27/2009				A Wilson	1/27/2009

TEST: ICP-MS	ME	THOD: EPA 20	OD: EPA 200.8				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE	
Arsenic	U	μg/L	0.93	5	M Pattanayek	1/27/2009	
Barium	25	μg/L	2.5	5	M Pattanayek	1/27/2009	
Beryllium	U	μg/L	0.11	1	M Pattanayek	1/27/2009	
Cadmium	U	μg/L	0.41	1	M Pattanayek	1/27/2009	
Chromium	U	μg/L	2.0	5	M Pattanayek	1/27/2009	
Cobalt	0.06J	μg/L	0.04	1	M Pattanayek	1/27/2009	
Lead	U	μg/L	0.10	1	M Pattanayek	1/27/2009	
Manganese	2.5	μg/L	0.42	1	M Pattanayek	1/27/2009	
Selenium	U	μg/L	1.3	5	M Pattanayek	1/27/2009	
Thallium	0.08J	μg/L	0.03	1	M Pattanayek	1/27/2009	
Vanadium	3.6J	μg/L	3.4	5	M Pattanayek	1/27/2009	

TEST: Mercury	ME	METHOD: EPA 245.1				
ANALYTE	RESULT	UNITS	MDL	MQL	ANALYZED BY:	DATE
Mercury	U	μg/L	0.13	0.2	A Wilson	1/27/2009

J - Estimated value between MDL and MQL

MDL - Method Detection Limit

MQL - Method Quantitation Limit